December 23, 2002, and the Examiner issued an Advisory Action maintaining the rejection on January 24, 2003. Accordingly, after filing an RCE, Applicants submit this Reply and request reconsideration in view of the following remarks.

In the Advisory Action, the Examiner alleges that rotors having permanent magnets alternately arranged in polarities are well known in the art, citing to JP '436 as an example. The Examiner then goes on to state that the "rationale" for applying JP '436 in combination with JP '050 is the teaching of an alternate polarity arrangement for permanent magnets in a rotor. Absent from this "rationale", and what makes such rationale legally impermissible, is the fact there is no motivation or suggestion noted by the Examiner for why one would modify JP '050 to use an alternate polarity arrangement. In fact, JP '050 does not present the problem which Applicants' invention solved, hence one skilled in the art would not consider any other reference in combination with it.

Clearly, the Examiner's "rationale" is merely the legally impermissible "obvious to try" standard that has been regularly rejected by the Federal Circuit. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988) ("whether a particular combination might be 'obvious to try' is not a legitimate test of patentability"); *Gillette Co. vs. S. C. Johnson and Son, Inc.*, 919 F.2d 720, 725 (Fed. Cir. 1990) ("we have consistently held that 'obvious to try' is not to be equated with obviousness under 35 U.S.C. 103"). Here, the Examiner does not factor into account the result to be obtained as discussed below. Rather, the Examiner's rationale is based solely, and impermissibly, on the notion that it would be obvious to try combining permanent magnets having alternately arranged

polarities in a rotor such as JP '050, which itself uses permanent magnets having the same polarity.

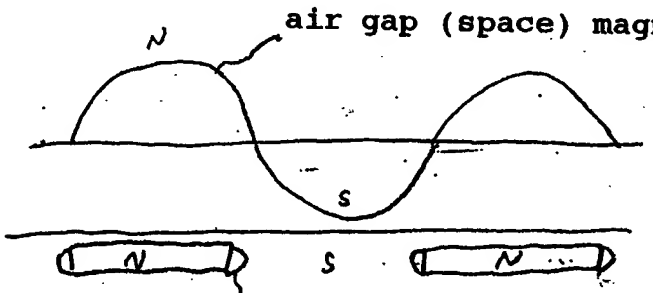
Each of Applicants' independent claims 18 and 19 recite a permanent magnet electric rotating machine. The rotor of said machine has plural permanent magnet insertion holes 10 arranged circumferentially in a ring-shaped arrangement in the rotor 8. Permanent magnets 9 are embedded in the holes 10 alternately having a reversed polarity, i.e., N, S, N... Auxiliary magnetic pole portions 16 are provided between each two adjacent permanent magnets 9. A magnetic air gap 14 is provided either in both sides in the peripheral direction of the permanent magnets 9 (claim 18) or between the auxiliary magnetic pole portions 16 and magnetic pole piece portions 15 (claim 19).

As specifically recited in claims 18 and 19, as a result of the claimed structure, a change in the magnetic flux density between the permanent magnets and the auxiliary magnetic pole portions is formed smoothly and a cogging torque is restrained. Applicants therefore attempted to solve a problem previously existing with the use of a permanent magnet rotor of a permanent electric rotating machine (see page 4, lines 1-9 and 15-20). Applicants' structure moderates, i.e. forms smoothly the change in magnetic flux density between the permanent magnet and the auxiliary pole portion, accordingly the cogging torque is restrained (see, for example, page 5, lines 15-18).

Regarding JP '050, a permanent magnet synchronous electric motor has slots 5 in the rotor core 4 every pole pitch. Permanent magnets 5a having the same polarity in the radial direction are inserted into the slots. In the vicinity of

the outer periphery, holes 6 are provided for preventing leakage magnetic flux. As recognized by the Examiner, the adjacent permanent magnets 5a of JP '050 have the same polarity, not alternate polarities as claimed in Applicants' invention. Because of this, the rotor core portion 4a in JP '050 between the adjacent permanent magnets 5a does not form auxiliary magnetic poles as in Applicants' claimed invention.

Accordingly, the rotor of JP '050, the magnetic flux density between the rotor core portion 4 of the adjacent permanent magnets 5, and the permanent magnets 5a would have slack from the beginning as shown in the following figure:



air gap for preventing leakage between poles

(since there is air gap between N and S, the effect for forming slack (gently or loose) the magnetic flux distribution is small)

In view of the above, in JP '050, the technical problem of moderating the magnetic flux distribution between the permanent magnet and the auxiliary magnetic pole, as is necessary in the present invention, is not present. Hence, because JP '050 did not present the problem which Applicants' invention solved,

one skilled in the art would not consider any other reference in combination with it.

Of course, the use of hindsight is not appropriate in an obviousness combination. Yet, the secondary JP '436 reference is utilized for providing adjacent permanent magnets 8 having different polarities. However, in JP '436, no magnetic air gap is provided between the rotor main body portion 3a (auxiliary magnetic pole) of the adjacent permanent magnets 8 and the permanent magnet 8. In other words, JP '436 merely discloses a known structure for forming an auxiliary magnetic pole and for utilizing a reluctance torque. It does not disclose Applicants' technical solution of moderating the magnetic flux density between the permanent magnet and the auxiliary magnetic pole. Hence, Applicants submit one skilled in the art would have no motivation to combine JP '436 with JP '050, absent Applicants' teachings.

Reiterating, in JP '050 there is no necessity for solving the problem of moderating the magnetic flux distribution between the permanent magnet and the auxiliary magnet pole as shown in the present invention. On the other hand, in JP '436 there is no technical teaching of moderating the magnetic flux density between the permanent magnet and the auxiliary magnetic pole. Because neither reference recognizes the idea of moderating the magnetic flux density, one skilled in the art would not be motivated to make such a combination. As noted above, "obvious to try" is not to be equated with obviousness under §103.

In view of the foregoing, Applicants submit independent claims 18 and 19 are patentable over JP '050, whether taken alone or in combination with JP '436.

Moreover, claims 20-25 depend from these claims, respectively, and are also submitted to be patentable.

For the foregoing reasons, Applicants request reconsideration and allowance of all claims 18-27. An early notice to that effect is solicited.

If there are any questions regarding this Reply or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #381NP/43816CO).

Respectfully submitted,

May 20, 2003

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